

(5-year incidence of major vascular events 9%) inflates the estimate of absolute benefit from 1.5% (our estimate) to 2.5%.

The CTT collaborators have primary prevention outcome data that can resolve the issues we raise. Subpopulations of particular interest include: men, women, men aged 70 years or older, women below the age of 70 years, people with diabetes mellitus, 20% of people with the lowest bodyweight, people taking more than five drugs, and tertiles of cardiovascular risk at baseline. The following are the outcomes that would be most informative: total mortality, total SAEs, total incidence of cancer, and total cardiovascular events. This analysis would answer the key outstanding questions. First, do the data on primary prevention confirm that there is no overall benefit in adult women of any age and in men aged 70 years and older? And, second, is there significant heterogeneity between the statin treatment effect in primary prevention subgroups compared with that in secondary prevention subgroups?

If the answer to both these questions is yes, the assumption that the benefits for secondary prevention populations can be extrapolated to primary prevention populations is false and the cholesterol treatment guidelines based on this assumption should be revised.

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JMW declares no conflict of interest. JA is an expert consultant to plaintiffs' attorneys on litigation involving the drug industry, including Pfizer for its marketing of atorvastatin.

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## Pesticide self-poisoning: thinking outside the box

Self-poisoning with pesticides is a major global public-health problem, with estimates of 300 000 deaths a year in the Asia-Pacific region alone.<sup>1</sup> WHO now estimates that pesticide ingestion is the most common method of suicide worldwide, and has responded by launching a global Pesticides and Health Initiative.<sup>2,3</sup>

Several approaches have been proposed to reduce the high morbidity and mortality associated with pesticide self-poisoning. These strategies include improved clinical management of poisoning, provision of counselling services for vulnerable individuals, and restricted access to toxic pesticides.<sup>4,5</sup>

Restriction of the availability of pesticides to prevent their use in impulsive acts of self-harm is emerging as a favoured approach.<sup>3,6</sup> Suggested measures include the development of agricultural practices in which pesticide use is avoided or reduced to a minimum, national bans on highly toxic pesticides, and promotion of initiatives to

store pesticides safely.<sup>6</sup> Before one or more approaches are chosen, careful assessment will be required from a combined public-health and agricultural perspective.

The pesticide industry has long argued for secure storage and use of locked boxes to prevent all forms of pesticide poisoning,<sup>7</sup> and has started several projects testing and scaling-up the use of safe-storage boxes.<sup>8</sup> With the active backing of industry, support for this approach has begun to gather momentum at WHO and the International Association for Suicide Prevention, with three meetings in Durban, Singapore, and Geneva.<sup>9,10</sup>

The pesticide industry's concern about this important public-health issue is welcome. However, industry-led initiatives will probably be affected by corporate priorities for shareholders and profits, and could bypass adequate consideration and assessment of alternative strategies.



**Figure: Pesticide-storing metal box**

This box (45×30×37 cm) has been forced open and the contents used for self-harm.

A second concern about the rapid scale-up and implementation of the locked-box approach is to carefully ensure that the approach will not have unplanned adverse effects. Intuitively, locked boxes are a sensible solution. However, in a pilot study in Sri Lanka, we found that many of the 172 participating households that received an inhouse storage box changed the location of pesticide storage from their fields (0.1–2 km away) to their homes. After 7 months, the number of households storing pesticides in their household increased from 54% to 98%, and only 84% locked the box. These changes could thus increase access to pesticides at times of stress. The storage box also highlighted where exactly the pesticides were stored; during our study, locked boxes were twice broken into (figure) and pesticides ingested, with one death. Another intervention of simple distribution of boxes without education or support resulted in only 30% of households locking their box.<sup>11</sup>

So far, no studies assessing the feasibility or effectiveness of safe pesticide-storage devices have been published. Such knowledge is needed before the practice can be widely recommended. Variation in cultural beliefs and agricultural practice in different communities and countries highlights the need for qualitative research to ensure generalisability to local circumstances and to implement appropriate modifications. Practical design issues, including ways to increase the likelihood of boxes being locked, should also be assessed before large-scale trials are undertaken. Infield storage devices

or community-run stores could be more effective than the currently promoted inhouse boxes, but acceptable models have not yet been developed.

With the public-health community's energy focused on safe storage, policymakers could be distracted from more immediate and longlasting solutions such as sales restrictions, product reformulation, import bans, and general reductions in agricultural pesticide use. Safe-storage interventions should be studied and assessed with other options that might not be as attractive to industry.

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DG, ME, and AHD are on the scientific advisory group of a Syngenta-funded study to assess the toxicity of a new formulation of paraquat, and have received travel expenses to attend research group meetings. AHD and DG are on the scientific advisory group for a safe-storage project funded by Syngenta.

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